

REMARKS

The amended claims 1 and 10 include the subject matter of original claim 4. The Office has admitted in the previous Actions in this application that the Angevine reference does not disclose the claimed amount of catalyst in each layer as previously recited in claim 4. (The Office does not allege that the other publications cited (Frye et al. and Gardner et al.) disclose the claimed amount of catalyst in each layer). However, it is the position of the Office that it would be obvious to use the amount of catalyst previously recited in claim 4 because "one of ordinary skill in the art would utilize amounts that result in effective hydrotreating".

Obviousness must come from within the teachings of the prior art. The materiality of the amount of catalyst now recited in claims 1 and 10, however, is nowhere disclosed or suggested in the prior art. As described on page 15, lines 8 to 14, of the present specification, when the amount is less than 3 % by volume, the desulfurization or the demetalization will be unsatisfactory, while when it exceeds 70 % by volume, the amount of the catalysts packed into the other layers will be so small that the advantageous effect

attained will also be poor unfavorably. The combined teachings of Angevine, Frye et al. and Gardner et al. fail to enable the art-skilled person to reasonably predict such disadvantages, i.e., to reasonably predict the advantages of said amount of catalyst in each layer. Therefore, the combined teachings of Angevine, Frye et al. and Gardner et al. fail to support a case of *prima facie* obviousness of the amended claims 1 and 10.

New claim 19 is the same as original claim 5 except that claim 19 excludes an alumina carrier. New claim 20 recites subject matter equivalent to that of claim 19. The combined teachings of Angevine, Frye et al. and Gardner et al. disclose only an alumina support and do not disclose and do not suggest that a carrier of a porous inorganic oxide selected from the group consisting of silica, titania, zirconia, magnesia, alumina-silica, alumina-boria, alumina-titania, alumina-zirconia, alumina-magnesia, alumina-silica-zirconia, alumina-silica-titania, zeolites, sepiolite and montmorillonite can effectively be used as a carrier in Angevine to obtain the results disclosed therein. Therefore, new claims 19 and 20 would also not have been obvious under 35 U.S.C. § 103(a) over the combined teachings of Angevine, Frye et al. and Gardner et al.

New claims 21 and 22 limit the number of catalyst layers based on the Example in the present application. The combined teachings of Angevine, Frye et al. and Gardner et al. do not disclose and do not suggest at least six catalyst layers satisfying the specific requirements. As apparent from the present Example and Comparative Example, a catalyst system composed of six (four or more) catalyst layers packed, respectively, with hydrotreating catalysts satisfying the specific requirements exhibits an unexpected enhanced activity over a prolonged period as compared with a catalyst system composed of three catalyst layers packed respectively with hydrotreating catalysts satisfying the same requirements. Therefore, new claims 21 and 22 would also not have been obvious under 35 U.S.C. § 103(a) over the combined teachings of Angevine, Frye et al. and Gardner et al.

The foregoing is believed to place this application in condition for allowance. If, however, minor issues remain that can be resolved by means of a telephone interview, the Examiner is respectfully requested to contact the undersigned attorney at the telephone number indicated below.

PATENT APPLN. NO. 09/740,969  
SUBMISSION UNDER 37 C.F.R. § 1.114

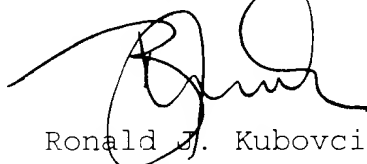
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In the event that this paper is not considered to be timely filed, applicants hereby petition for an appropriate extension of time. The fee for any such extension may be charged to our Deposit Account No. 111833.

In the event any additional fees are required, please also charge our Deposit Account No. 111833.

Respectfully submitted,

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